

Amendments to the Specification

In the Abstract, please amend the following.

A method and a device for on-chip magnetic resonance spectroscopy (~~FMR, SPR, EPR, ESR, NMR~~) is proposed. On-chip magnetic resonance spectroscopy may be applied to non-magnetic as well as magnetic materials which may be solids, liquids, or gases. ~~and to solids, liquids and gases.~~ The method of the present invention is suitable for miniaturised miniaturized materials analysis such as ~~for example microfluidics~~ such as, for example, micro-fluidics. ~~The strength of~~ In an example embodiment, the method ~~lies in the~~ relies on the combination of highly efficient spin excitation near on-chip current wires with very sensitive on-chip magnetic sensors. The method and device also allows one to separately detect different types of magnetic particles or molecules.

~~Fig. 3~~

In the Specification, page 4, lines 29-33 through page 5, lines 1-4, please amend as shown.

~~The present invention provides a device for on-chip resonance measurements for use with a first orienting magnetic field. The device comprises a chip. The chip comprises:~~

- ~~—— on-chip means for creating a second electromagnetic field to excite precession of oriented spin magnetic moments in a sample to be analysed, and~~
- ~~—— at least one magnetic sensor for on-chip detection of a magnetic precession of the spin magnetic moments about the first orienting magnetic field in the sample to be analysed.~~

In an example embodiment, the present invention provides a device for on-chip resonance measurements for use with a first orienting magnetic field. The device comprises a chip. The chip comprises an on chip means for creating a second electromagnetic field to excite precession of oriented spin magnetic moments in a sample

to to be analyzed. There is at least one magnetic sensor for on-chip detection of a magnetic precession of the spin magnetic moments about the first orienting magnetic field in the sample to be analysed.

In the Specification, page 6, lines 7-15, please amend as shown.

~~The present invention furthermore provides a method for performing on-chip magnetic resonance measurements. The method comprises:~~
~~—— orienting spin magnetic moments inside a sample in a first orienting field,~~
~~—— exciting precession of the spin magnetic moments inside the sample to be analysed, and~~
~~—— on-chip detecting of spin magnetic moments precession by means of a magnetic sensor.~~
~~—— The magnetic resonance measurements may for example be magnetic resonance spectroscopy such as NMR, EPR, ESR, FMR, SPR.~~

In another example embodiment, the present invention furthermore provides a method for performing on-chip magnetic resonance measurements. The method comprise orienting spin magnetic moments inside a sample in a first orienting field. Inside the sample to be analyzed, the precession of the spin magnetic moments are excited. With a magnetic sensor, the spin magnetic moments precession is detected on-chip.

The magnetic resonance measurements may, for example, be magnetic resonance spectroscopy such as NMR, EPR, ESR, FMR, and SPR.